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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,220	04/11/2001	Yasuhiko Nara	29284/541	9834

23838 7590 09/03/2003

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WASHINGTON, DC 20005

EXAMINER

BERMAN, JACK I

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,220

Applicant(s)

NARA ET AL.

Examiner

Jack I. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 10 have been amended to claim an apparatus and method for setting “the size of a pixel at the detection” of a signal. Neither an apparatus nor a method to perform this function is disclosed. In Applicant’s argument in support of these amendments, Applicant points to paragraph [0156] of the specification, which states: “The pixel size denotes a size of pixel of an image which is formed from the signal obtained by the secondary electron detector 35 shown in FIG. 2, namely, a length of one side. A pixel smaller than a beam diameter of the electron beam can be selected. Therefore, even if a width of circuit pattern differs on one chip, the size of pixel can be designated in accordance with the width of the circuit pattern, so that a high efficiency of the inspection time can be realized.” However, this disclosure does not support the amendment. To the contrary, the disclosure explicitly states that “[t]he pixel size denotes a size of pixel of an image which is formed from the signal obtained by the secondary electron detector 35”. The size of the pixel of an image formed from a detected signal, not the size of a pixel of a detected image. The difference is crucial. If the pixel size of a displayed image is changed, the magnification of the displayed image inherently changes along with it. This was explained in the Office actions mailed on May 30, 2002 and February 21, 2003 in connection

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with the rejection of claims 1 and 10 as being obvious over Meisberger et al. in view of Inokuchi and Maeda et al. Just such a change in magnification is suggested at paragraph [0159] of the specification in the instant application which refers to buttons for "SEM low magnification" and "SEM high magnification" and more explicitly set forth in paragraphs [0276], [0277], and [0286], which teach that an area of an image of a chip can be enlarged. On the other hand, if the pixel size of the detected image is changed, then, as Applicant argues in the remarks accompanying the amendment, the resolution of the image is changed. The examiner has been unable to find any support in the original disclosure to support such a change in resolution. Since amended claims 2 and 3 now claim such a change in resolution because of the new limitation concerning a processor and a method step "to obtain a fine image", these claims are also unsupported by the original disclosure. Since the disclosure is not enabling for newly amended claims 1-3 and 10, the prior art has not been searched for comparison to the invention claimed in these claims.

Claims 4, 5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meisberger et al. in view of Todokoro et al. and Inokuchi for the reasons explained in the previous Office action.

Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inokuchi in view of Nomoto et al. for the reasons explained in the previous Office action.

Applicant's arguments filed June 23, 2003 have been fully considered but they are not persuasive. With regard to Claim 4, Applicant argues that none of the references disclose "first and second images being displayed in at least one of different colors and different manners." This assertion is incorrect. As was pointed out in the previous Office action, Todokoro

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et al. teaches at line 46 in column 26 through line 4 in column 27 that different image signals, either from different types of detected signals or from the design information of the circuit pattern (which inherently constitutes a wafer map) may be combined by a graphic composer and displayed on a monitor in a superimposed (i.e. "overlapping") manner. At lines 8-11 in column 27, Todokoro et al. goes on to teach: "Furthermore, when performing display of the specimen image as above, display of the concealed part may be characterized by, for example, color display or contour display." It would have been obvious to a person having ordinary skill in the art to use the graphic composer disclosed by Todokoro et al. to display the different image signals described by Meisberger et al. in different colors because Meisberger et al. requires some type of means to process the various image signals for display but does not specify a particular means. The graphic composer disclosed by Todokoro et al. fills this gap.

With regards to claims 5 and 11, Applicant argues that Meisberger et al. contains no disclosure concerning a monitor, Inokuchi teaches to display only a wafer map, and Todokoro et al. produces an image of a hole pattern rather than a defect. The first two assertions are incorrect and the third is irrelevant. At lines 1-2 in column 21, Meisberger et al. teaches that display 46 displays the output of a CCD camera. Such a display inherently constitutes a monitor. At lines 30-36 in column 19, the display of the defect image filing system (DIFS), which is a computer terminal that is shown in the figures to comprise a display monitor, may be "in the form of table, graph, image, wafer map, and so on." As for Todokoro et al. being concerned with SEM images of holes rather than defects, the graphic composing apparatus for an SEM system, the feature for which Todokoro et al. was cited, would be the same whether the features of interest were holes,

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defects, wires, or any other feature. In fact, sometimes defects have the form of holes. Therefore none of the arguments with respect to the rejection of claims 5 and 11 are convincing.

With respect to the rejection of Claims 9 and 12, Applicant argues that these claims require the making of a mark near a defect while Nomoto et al. teaches to mark a defect directly, which would make the defect impossible to view clearly afterwards. As was explained in the previous Office action, Inokuchi teaches that a defect can be located based upon its known position relative to a mark (an alignment mark). It would have been obvious to a person having ordinary skill in the art that if marking of a defect directly, as taught by Nomoto et al., obscured a defect to be examined, a mark near the defect could still be used to indicate the position of the defect as long as the relative positions of the mark and the defect were known by using the method and apparatus disclosed by Inokuchi.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

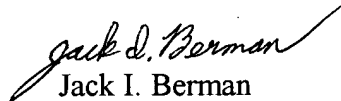
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (703) 308-4849. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Jack I. Berman
Primary Examiner
Art Unit 2881

jb
September 2, 2003